



**High performance valve
with PTFE or fire safe seat**

DN 50 to 450 (2 to 18")

Pressure class: Class 150 and B 25

Design in accordance with ASME B16.34 and EN 12516

Applications

- Marine, chemical tankers,
- Oil and gas, chemicals, petrochemicals
- L.P. steam, vacuum, and any application requiring the use of an off-set disc valve.

Working conditions

- Temperature:
from $-50\text{ }^{\circ}\text{C}$ min. up to $+150\text{ }^{\circ}\text{C}$
The working temperature depends on the media and on the material of the body and seat.
- Allowable pressure PS: 25 bar, at ambient temperature.
- Operating under differential pressure ΔP limited to 20 bar.
- Vacuum service down to 0 absolute bar.

Materials

Refer to page 2.

Design

- One-piece wafer type body (type 1)
- One-piece full lug type body (type 4).
- Two interchangeable seats: virgin PTFE or virgin PTFE fire safe.
- Double-eccentric kinematics.
- Upstream/downstream sealing: refer to page 5.
- Face-to-face in accordance with EN 558, ISO 5752 series 20 (except DN 350: ISO 5752 series 25) and API 609 table 2 standards.

- Actuation mounting plate in accordance with ISO 5211 and NF E 29-402 standards.
- Flange facing: stock finish.
- Connection according to EN 1092-1 PN 10, 16 and 25, ASME B 16.5 class 150, JIS B 2220-10K, 16K and 20K.
For other connections, please consult us.
- Stainless steel body: pickling and passivation.
- Marking in accordance with EN 19 standard.
- Fire safe according to API 607.
- Type approval by BV N° 12523/B0 BV, RINA N° MAC340509CS, DNV N° P-12898, ABS N° 09 LD496304-PDA, Lloyd's Register N° 04/00067.

Standard variants

- Manual actuator MR
- Hydraulic actuator ACTO, DYNACTO, ENNACTO
- Limit switches AMTROBOX R

Remarks

- Actuator selection 8460.15/.-90
- Operating instructions 8450.810/.-10

Data to be supplied when ordering

- DANAIS 150T valve, in accordance with leaflet no. 8460.12/8-10
- Size, materials for body and seat.
- Working conditions : nature of fluid, pressure, temperature.
- Actuation

Materials

Body	Temperature	Code KSB
Stainless steel ASTM A 351 gr. CF 8M / 1.4408	-50 °C to +150°C	6
Stainless steel ASTM A 351 gr. CF 3M / 1.4409	-50 °C to +150°C	6t
Stainless steel ASTM A 351 gr. CF 3M Mo > 2.75	-50 °C to +150°C	6m
Shaft		Code KSB
Stainless steel ASTM A 564 gr. 630	-50 °C to +150°C	6e
Stainless steel 1.4462	-50 °C to +150°C	7e
Disc		Code KSB
Stainless steel ASTM A 351 gr. CF 8M / 1.4408	-50 °C to +150°C	6
Stainless steel ASTM A 351 gr. CF 3M / 1.4409	-50 °C to +150°C	6t
Stainless steel ASTM A 351 gr. CF 3M Mo > 2.75	-50 °C to +150°C	6m
AMRING® seat		Code KSB
Virgin PTFE	-50 °C to +150°C	FB
Virgin PTFE fire-safe	-50 °C to +150°C	FF

Possible configurations: 6m body with 6m disc and 7e shaft
 6 body with 6 disc and 6e shaft
 6t body with 6t disc and 7e shaft

Pressure / temperature

In pressure class B 25 (european materials), DANAİS 150T valves are in accordance with EN 12516-1 standard. The values in the table below must be used for valves which have to comply with PED 97/23/CE:

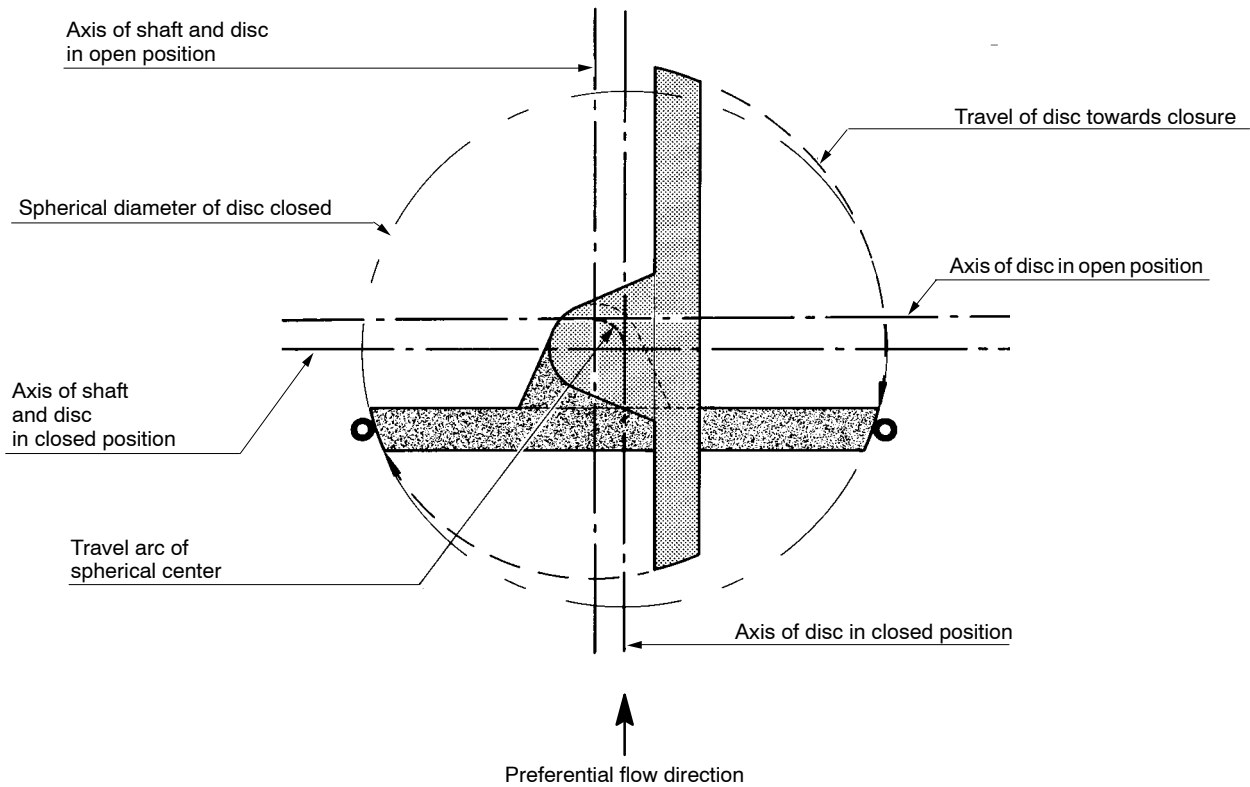
Pressure class	Material	Body	Seat	Working pressure in bar at temperature °C					
				-50	-10	20	100	135	150
B 25	1.4408 / 1.4409	PTFE / PTFE fire-safe		24,3	24,3	24,3	20,7	19,3	15,8

In pressure class 150 (ASTM materials), DANAİS 150T valves meet ASME B 16-34 cl.150 "Standard class" requirements, according to the following table:

Pressure class	Material	Body	Seat	Working pressure in bar at temperature °C					
				-50	-29	38	100	135	150
Class 150	A 351 gr. CF8M A 351 gr. CF3M A 351 gr. CF3M Mo	PTFE / PTFE fire-safe		19,0	19,0	19,0	16,0	15,2	14,8

Kinematics

The compression of the seating disc edge onto the seat is achieved by double-eccentric kinematics. The axis of the shafts is off-set to valve axis and eccentric to pipe axis. This design eliminates the possibility of friction during operation and, as a result ensures long lasting service while maintaining tight shut-off characteristics. These tight shut-off characteristics conform to the most exacting requirements and standards.



Upstream/downstream sealing

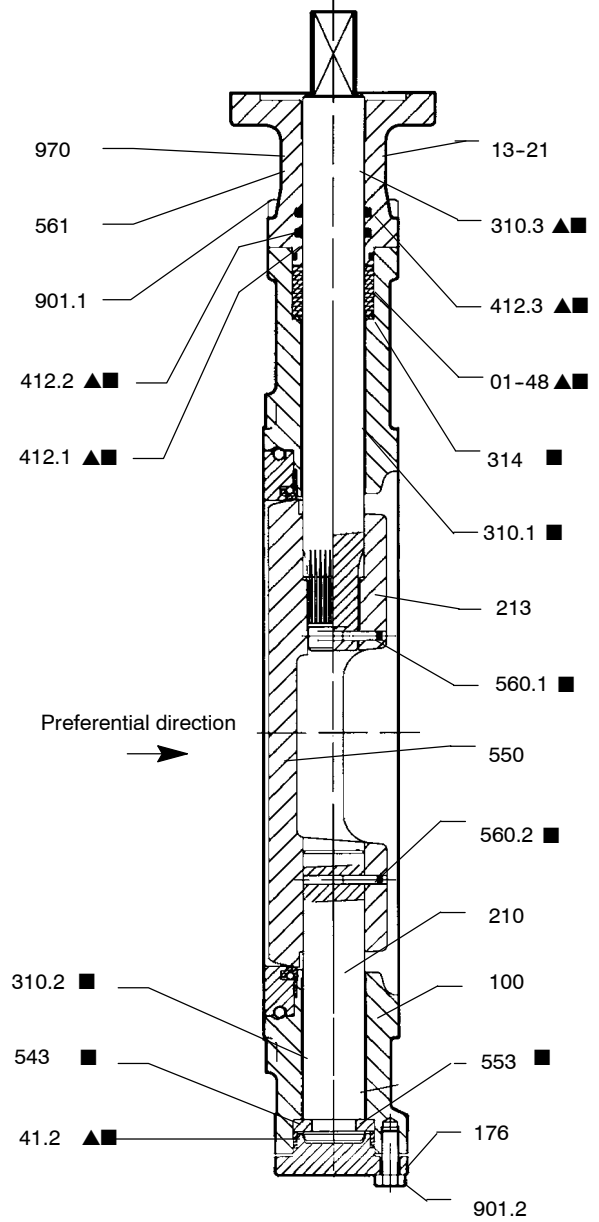
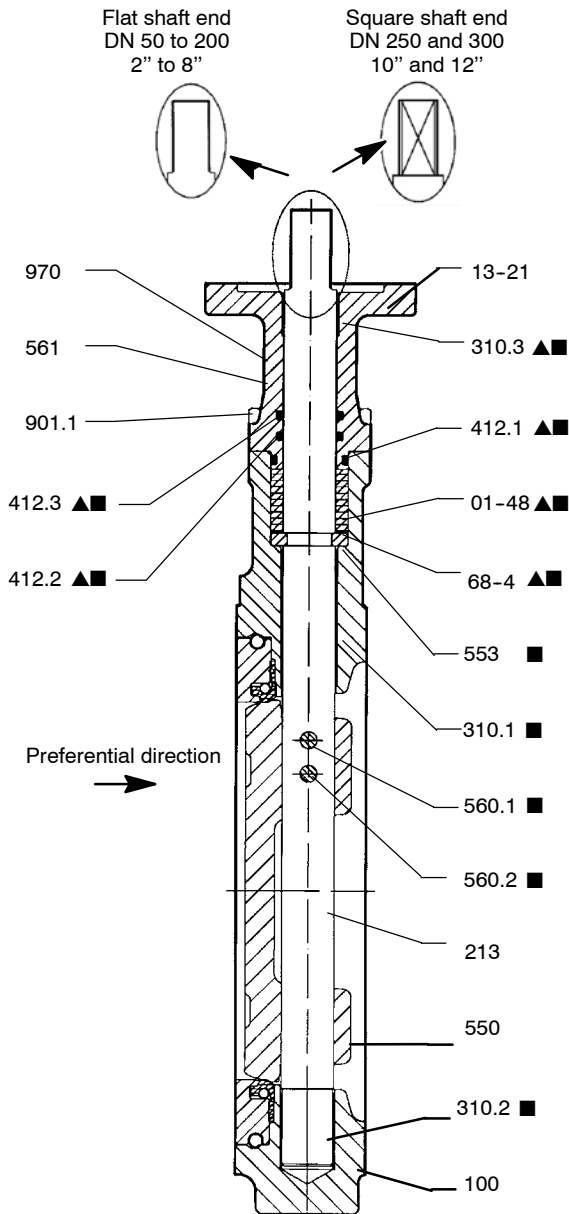
The DANAIS 150T valve conforms to the following sealing standards. The DANAIS 150T valve is a bi-directional valve with a preferential flow direction shown by an arrow (differential pressure direction on the disc).

Valve	With PTFE seat or PTFE fire-safe
On liquid	EN 12266 category A ISO 5208 category A API 598
On gas	EN 12266 category A ISO 5208 category A API 598 ANSI / FCI 70.2 class VI

Construction

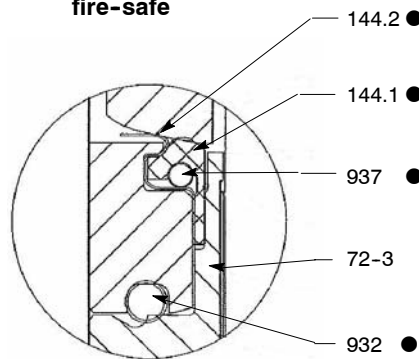
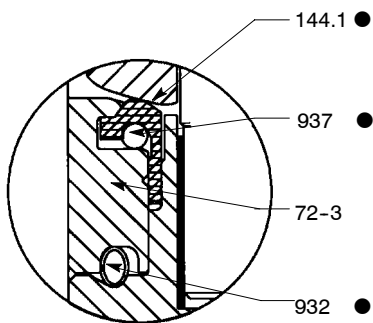
DN 50 to 300 (2" to 12")

DN 350 to 450 (14" to 18")



PTFE seat

PTFE seat fire-safe



● Spare parts kit for seat

▲ Spare parts kit for sealing packing

■ Spare parts for guiding

Parts list

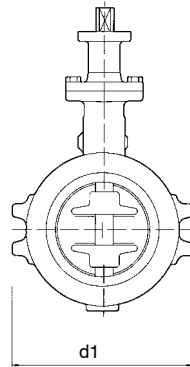
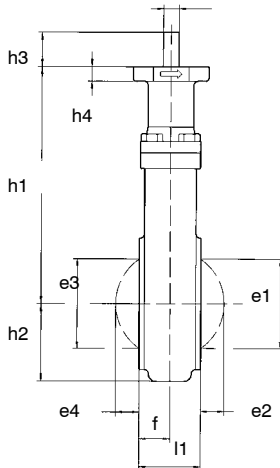
Item	Designation	DN	Materials
Common parts			
100	Body	50 to 450	Stainless steel ASTM A 351 gr. CF 8M / 1.4408 Stainless steel ASTM A 351 gr. CF 3M / 1.4409 Stainless steel ASTM A 351 gr. CF 3M Mo > 2.75
13-21	Extension	50 to 450	Stainless steel ASTM A 351 gr. CF 8M
176	Bottom	350 to 450	Stainless steel ASTM A 351 gr. CF 8M / 1.4408 Stainless steel ASTM A 351 gr. CF 3M / 1.4409 Stainless steel ASTM A 351 gr. CF 3M Mo > 2.75
210	Shaft	350 to 450	Stainless steel ASTM A564 gr. 630 / 1.4542 Stainless steel 1.4462 (operating differential pressure limited to 16 bar)
213	Driving shaft	50 to 450	Stainless steel ASTM A564 gr. 630 / 1.4542 Stainless steel 1.4462 (operating differential pressure limited to 16 bar)
310.1	Upper plain bearing	50 to 450	Stainless steel + PTFE
310.2	Lower plain bearing	50 to 450	Stainless steel + PTFE
310.3	Lower plain bearing	350 to 450	Stainless steel +PTFE
314	Thrust washer	350 to 450	Stainless steel
412.1	O-Ring	50 to 450	Viton
412.2	O-Ring	50 to 450	Viton
412.3	O-Ring	50 to 450	Viton
543	Spacer bush	350 to 450	Stainless steel
553	Thrust insert	50 to 450	Stainless steel
560.1	Pin	50 to 450	Stainless steel 1.4944 for body 6m and 6t Stainless steel 1.4542 for body 6
560.2	Pin	50 to 450	Stainless steel 1.4944 for body 6m and 6t Stainless steel 1.4542 for body 6
561	Grooved nail	50 to 450	Stainless steel
68-4	Foil	50 to 300	Stainless steel
901.1	Hexagon-head screw	50 to 450	A4-70 stainless steel
901.2	Hexagon-head screw	350 to 450	A4-70 stainless steel
920	Hexagonal nut	50 to 450	A4-70 stainless steel
970	Identity plate	50 to 450	Stainless steel
Valve with PTFE seat			
01-48	Sealing packing	50 to 450	Expanded graphite
144.1	Seat	50 to 450	Virgin PTFE
41-2	Static joint	350 to 450	Expanded graphite
72-3	Tightening flange	50 to 450	Stainless steel
550	Disc	50 to 450	Stainless steel ASTM A 351 gr. CF 8M / 1.4408 Stainless steel ASTM A 351 gr. CF 3M / 1.4409 Stainless steel ASTM A 351 gr. CF 3M Mo > 2.75
932	Inner ring	50 to 450	Stainless steel
937	Elastic wire	50 to 450	Stainless steel
Valve with PTFE seat fire safe			
01-48	Sealing packing	50 to 450	Expanded graphite
144.1	Seat	50 to 450	Virgin PTFE
144.2	Fire-safe sheet	50 to 450	Stainless steel ASTM A 240 gr. 316L
41-2	Static joint	350 to 450	Expanded graphite
72-3	Tightening flange	50 to 450	Stainless steel
550	Disc	50 to 450	Stainless steel ASTM A 351 gr. CF 8M / 1.4408 Stainless steel ASTM A 351 gr. CF 3M / 1.4409 Stainless steel ASTM A 351 gr. CF 3M Mo > 2.75
932	Inner ring	50 to 450	Stainless steel
937	Elastic ring	50 to 450	Stainless steel

Wafer type body Type 1 - Dimensions

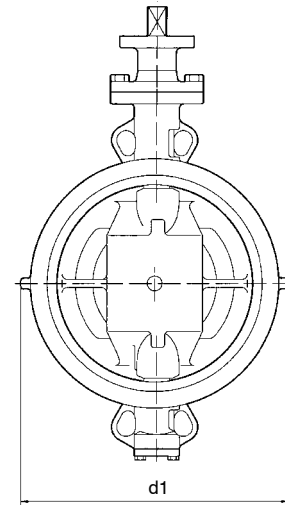
DN 50 to 200 (2" to 8")

DN 250 to 400 (10" to 16")

DN 50 to 200: flat end "s" machined in $\varnothing z$
 DN \geq 250: square end "s"

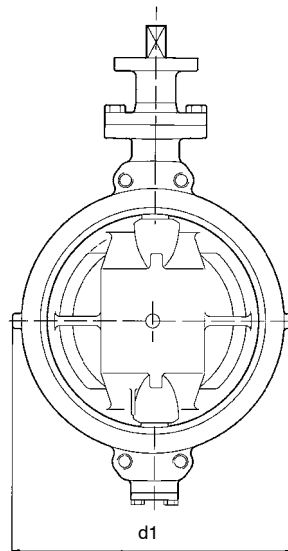


DN shown: 100 (4")



DN shown: 400 (16")

DN 450 (18")



mm

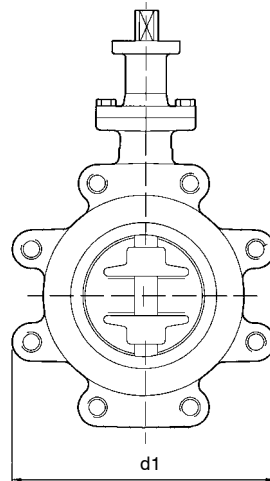
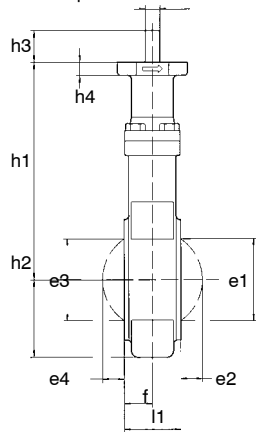
DN	NPS	Face to face l1					Mounting plate according to ISO 5211		Flat shaft end			Square shaft end		Disc clearance			
			d1	h1	h2	f	n°	h4	s	$\varnothing z$	h3	s	h3	e1	e2	e3	e4
50	2	43	104	165	53	21,5	F05	10	11	14	24			23	0	33	3,5
65	2 1/2	46	123	175	60	23,0	F05	10	11	14	24			41	6	48	9
80	3	46	140	185	68	24,0	F05	10	11	14	24			59	13	61	15
100	4	54	180	200	82	27,0	F05	10	14	18	24			78	18	81	21
125	5	57	210	225	92	28,5	F07	12	14	18	30			99	27	103	30
150	6	57	235	240	117	28,5	F07	12	17	22	32			127	39	131	43
200	8	62	271	290	153	34,5	F10	15	19	25	35			177	62	175	59
250	10	70	323	335	182	38,0	F12	18				25	45	225	82	230	80
300	12	80	380	365	230	42,0	F12	18				27	45	265	96	266	98
350	14	92*	449	435	307	47,5	F14	22				30	55	308	112	311	116
400	16	102	505	465	332	56,5	F14	22				36	55	359	133	358	132
450	18	114	570	530	371	61,0	F16	26				40	65	418	155	418	160

* Face to face according to API 609 table 2 and EN 558 standards
 * Face to face in accordance with API 609 table 2 class 150 and EN 558.

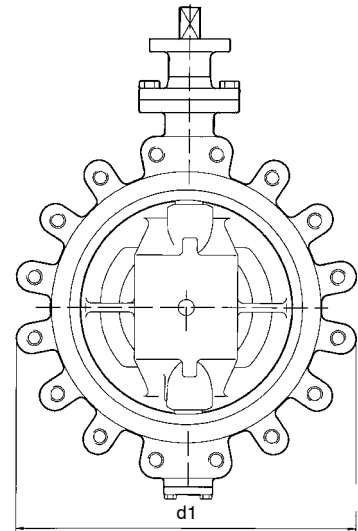
Full lug type body Type 4 - Dimensions

DN 50 to 300 (2" to 12")
DN 350 to 450 (14" to 18")

DN 50 to 200: flat end "s" machined in øz
 DN ≥ 250: square "s"



DN shown: 100



DN shown: 400

mm

DN	NPS	Face to face l1					Mounting plate according to ISO 5211		Flat shaft end			Square shaft end		Disc clearance			
			d1	h1	h2	f	n°	h4	s	øz	h3	s	h3	e1	e2	e3	e4
50	2	43	117	165	60	21,5	F05	10	11	14	24			23	0	33	3,5
65 (1)	2 ½	46	131	175	67	23,0	F05	10	11	14	24			41	6	48	9
65 (2)	2 ½	46	162	175	82	23,0	F05	10	11	14	24			41	6	48	9
80 (3)	3	46	136	185	70	24,0	F05	10	11	14	24			59	13	61	15
80 (4)	3	46	176	185	89	24,0	F05	10	11	14	24			59	13	61	15
100	4	54	206	200	104	27,0	F05	10	14	18	24			78	18	81	21
125	5	57	240	225	121	28,5	F07	12	14	18	30			99	27	103	30
150 (1)	6	57	267	240	135	28,5	F07	12	17	22	32			127	39	131	43
150 (2)	6	57	288	240	145	28,5	F07	12	17	22	32			127	39	131	43
200 (5)	8	62	310	290	157	34,5	F10	15	19	25	35			177	62	175	59
200 (6)	8	62	338	290	169	34,5	F10	15	19	25	35			177	62	175	59
250	10	70	410	335	205	38,0	F12	18				25	45	225	82	230	80
300 (7)	12	80	460	365	230	42,0	F12	18				27	45	265	96	266	98
300 (8)	12	80	470	365	235	42,0	F12	18				27	45	265	96	266	98
350 (3)	14	92*	508	435	307	47,5	F14	22				30	55	308	112	311	116
350 (4)	14	92*	529	435	307	47,5	F14	22				30	55	308	112	311	116
400	16	102	593	465	332	56,5	F14	22				36	55	359	133	358	132
450 (3)	18	114	620	530	371	61,0	F16	26				40	65	418	155	418	160
450 (4)	18	114	649	530	371	61,0	F16	26				40	65	418	155	418	160

- (1) Mounting between flanges EN 1092-1 PN 10 and 16 - 4 holes, ASME B16.5 cl.150 and JIS B2220-10K
- (2) Mounting between flanges EN 1092-1 PN 10 and 16 - 8 holes, PN 25 and JIS B2220-16 K and 20K.
- (3) Mounting between flanges EN 1092-1 PN 20 and ASME B16.5 cl.150.
- (4) Mounting between flanges EN 1092-1 PN 10, 16 and 25 and JIS B2220-10K, 16K and 20K.
- (5) Mounting between flanges EN 1092-1 PN 10, 16 and 25 and ASME B16.5 cl.150 and JIS B2220-10K.
- (6) Mounting between flanges JIS B2220-16K and 20K.
- (7) Mounting between flanges EN 1092-1 PN 10 and ASME B16.5 cl.150
- (8) Mounting between flanges EN 1092-1 PN 16, 25 and JIS B2220-10K, 16K and 20K

Operating torques

DANAIS 150T valve with PTFE seat or PTFE fire safe seat

Nm

DN	NPS	Preferential direction				Non preferential direction			
		Differential pressure ΔP in bar				Differential pressure ΔP in bar			
		6	10	16	20	6	10	16	20
50	2	20	20	30	30	20	20	20	20
65	2 ½	30	30	30	40	20	20	30	30
80	3	30	40	40	50	30	30	40	40
100	4	50	50	60	70	40	50	60	70
125	5	70	80	90	100	60	70	90	100
150	6	100	110	140	160	90	110	140	160
200	8	160	180	230	260	150	190	240	280
250	10	290	340	440	510	270	350	470	550
300	12	400	470	620	720	380	500	680	790
350	14	610	720	970	1 140	570	780	1 080	1 290
400	16	820	980	1 340	1 570	780	1 060	1 490	1 770
450	18	1 130	1 370	1 880	2 210	1 080	1 480	2 090	2 490

* The safety coefficient to define the adapted actuator is included in the torque value.

Hydraulic characteristics

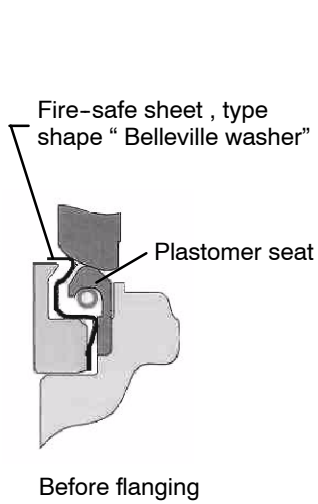
DN	NPS	Flow coefficient in fully open position		Zeta
		Kv_0	Cv_0	
50	2	70	80	2,04
65	2 ½	110	145	2,35
80	3	190	220	1,81
100	4	340	400	1,38
125	5	600	700	1,08
150	6	980	1 150	0,84
200	8	1 850	2 150	0,75
250	10	3 350	3 880	0,56
300	12	4 870	5 650	0,55
350	14	7 070	8 200	0,48
400	16	10 350	12 000	0,38
450	18	12 500	14 500	0,42

Fire safe version

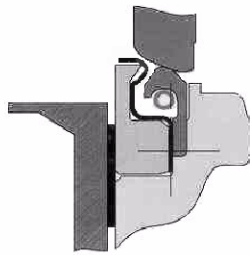
Version approved by Lloyd's Register in accordance with the API 607 standard.

Construction (see pages 4 and 5):

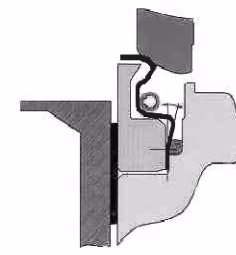
- plastomer seat and fire-safe sheet in inox,
- sealing packing in expanded graphite.



During the tightening between the flanges, the fire-safe sheet becomes flat. There is not contact between this sheet and the disc. The tightness is ensured by the plastomer seat.



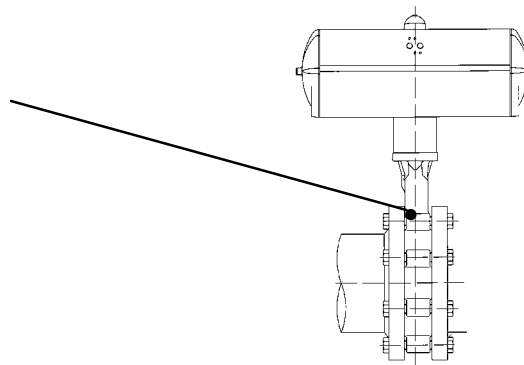
During fire proof, plastomer seat is destroyed. The sheet beame at initial shape and comes in contact with the disc. During fire, the tightness is ensured by this sheet (leakrate allowed according to API 607)



Safety safe version preconized with Type 4 body (full-lug body).

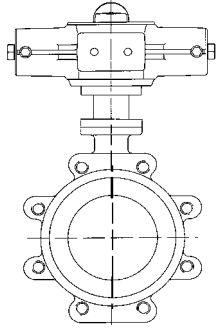
In case of fire, the flanging bolting is thermally isolated and protected by the body lugs.

This protection limits the bolting deformation in the fire and permits to keep the tightness at the level of the flanges O-rings.

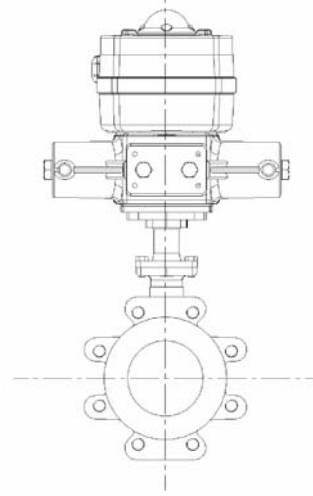


Standard variants

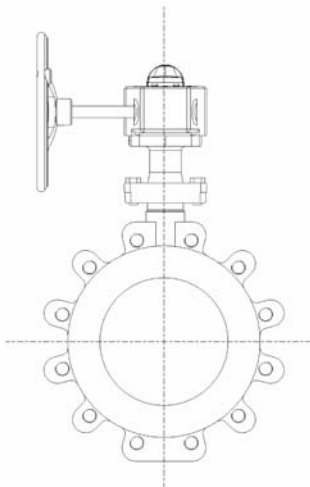
ACTO hydraulical actuator



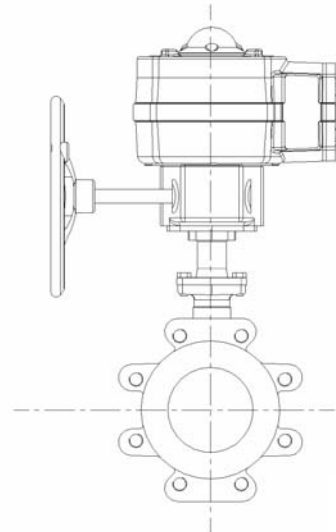
ACTO hydraulical actuator
+ AMTROBOX R



MR manual actuator



MR manual actuator
+ AMTROBOX R



Connections

The table below defines the possible connections. Please consult us for other connections.

Wafer type body - Type 1 -

DN	NPS	EN 1092-1			ASME B16.5 cl.150	JIS B2220	
		PN 10	PN 16	PN 25		10K	16K
50	2	✓	✓	✓■	✓	✓	✓★
65	2½	✓	✓	✓■	✓	✓	✓
80	3	✓	✓	✓■	✓	✓	✓
100	4	✓	✓	✓■	✓	✓	✓
125	5	✓	✓	✓■	✓	✓	✓
150	6	✓	✓	✓■	✓	✓	✓★
200	8	✓	✓	✓■	✓	✓	✓
250	10	✓	✓	✓■	✓	✓	✓
300	12	✓	✓	✓■	✓	✓★	✓★
350	14	✓	✓	✓■	✓	✓★	✓
400	16	✓	✓	✓■	✓	✓★	✓
450	18	✓●	✓●	✓■●	✓●	✓●	✓●

Lug type body - Type 4 -

DN	NPS	EN 1092-1			ASME B16.5 cl.150	JIS B2220	
		PN 10	PN 16	PN 25		10K	16K
50	2	✓	✓	✓■	✓	✓	✓■
65	2½	✓	✓	✓■	✓	✓	✓
80	3	✓	✓	✓■	✓	✓	✓
100	4	✓	✓	✓■	✓	✓	✓
125	5	✓	✓	✓■	✓	✓	✓
150	6	✓	✓	✓■	✓	✓	✓
200	8	✓	✓	✓■	✓	✓	✓
250	10	✓	✓	✓■	✓	✓	✓
300	12	✓	✓	✓■	✓	✓	✓
350	14	✓	✓	✓■	✓	✓	✓
400	16	✓	✓	✓■	✓	✓	✓
450	18	✓	✓	✓■	✓	✓	✓

✓ Connection allowed

✓★ Connection allowed (re-machined body)

✓● Connection allowed - Threaded holes at shaft passages

✓■ Please consult us

Face-to-face dimensions

The face-to-face dimensions of DANAIS 150T valve are in accordance with the following standards.

DN	Standards
50 (2") to 300 (12"), 400 (16") and 450 (18")	API 609 table 2 class 150, ISO 5752 series 20, EN 558-1 series 20
350 (14")	API 609 table 2 class 150, ISO 5752 series 25, EN 558-1 series 20

End of line and downstream dismantling

Use as end of line and downstream dismantling of the standard valves type 4 at room temperature for DN and the differential pressure (ΔPS) are defined hereafter.

End of line and downstream dismantling not allowed for wafer type body - Type 1.

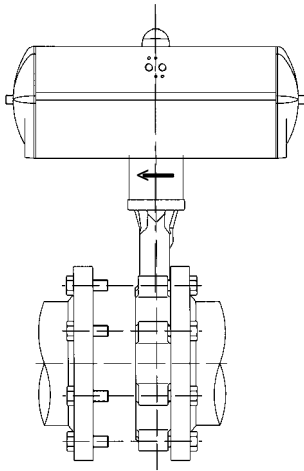
DANAIS 150T	Gas or liquids*		Liquids	
	Hazardous	Non hazardous	Hazardous	Non hazardous
class 150 ** B 25	All DN: on request	All DN: $\Delta PS = 15 \text{ bar max.}$	All DN: $\Delta PS = 15 \text{ bar max.}$	All DN: $\Delta PS = 15 \text{ bar max.}$

* Liquids having a vapour pressure at the maximum allowable temperature of not more than 0,5 bar above atmospheric pressure (1013 mbar).

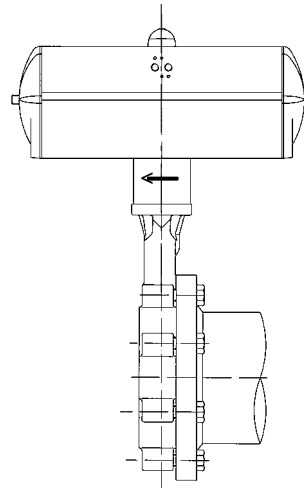
** With shaft 1.4462 (ΔPS limited to 10 bar)
 ΔPS Differential pressure

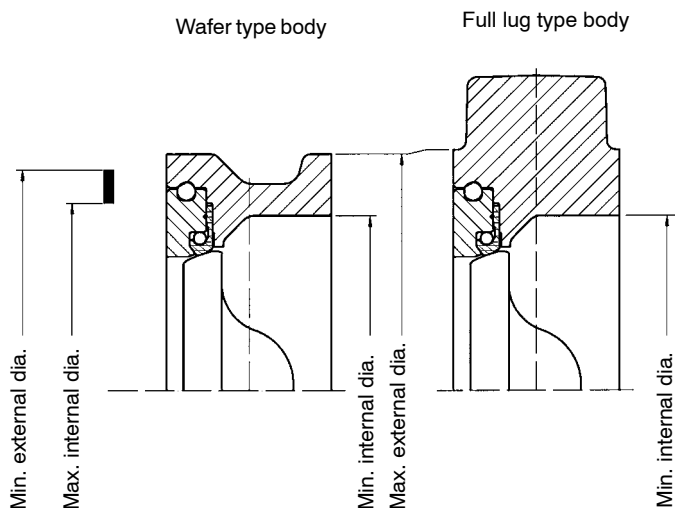
NB: A valve fitted at the end of a pipe with a blind flange downstream is not to be considered as an end of pipe service.

Downstream dismantling



End of line



Flange sealing


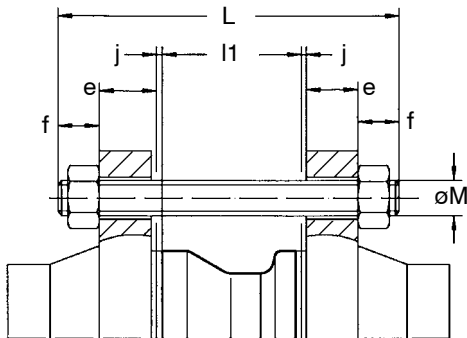
mm

DN		NPS		Flange sealing			Connections	
				Min. area		Max. area		
				Max. internal dia.	Min. ext. dia.	Min int. dia.		Max. external dia.
50	2	69,6	84,6	62	90,5	91	All	
65	2½	83,6	98,6	75	108	104	PN 10/16 - ASME B16.5 cl 150 - JIS 10K	
						117	PN 25 - JIS 16K/20K	
80	3	101,2	116,6	91	125	126	ASME B 16.5 cl150	
						131	PN 10/16/25 - JIS 10K/16K/20K	
100	4	126,6	142,6	117	154	156,5	All	
125	5	153,6	169,6	144	183	185		
150	6	180,6	199,1	171	214	215		
200	8	231,5	253,5	222	267	269	PN 10 - ASME B 16.5 cl150	
						265	PN 16/25 - JIS 10K/16K/20K	
250	10	286,9	305,5	275	321,5	323	All	
300	12	339,3	358,5	327	377	380	PN 10/16 - ASME B16.5 cl 150	
						388	PN 25 - JIS 10K/16K/20K	
350	14	374,6	400	359	411,5	412	ASME B16.5 cl 150	
						428	PN 10/16/25 - JIS 10K/16K/20K	
400	16	425,9	452	410	467,5	469	All	
450	18	478,5	510	461	530,5	532,5		

Note: the use of spiral-wound gaskets according to ISO 7483 - PN 10 to 25 is recommended.

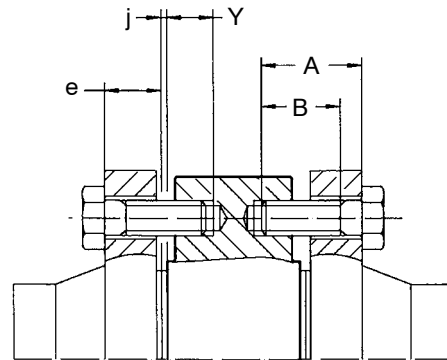
Wafer type body - Type 1 - Bolting

The bolting is not supplied



$$L = l1 + 2e + 2f + 2j$$

- L : tie-rod length
- l1 : valve face-to-face
- e : flange thickness
- f : tie-rod overlength
- j : flange gasket thickness



Screws at shaft passages (DN 450)

$$A \text{ max.} = e + Y + j$$

- A max.: screw length
- e : flange thickness
- j : flange gasket thickness
- Y : screw max. implantation
- B : min. threaded length $B > A - e$

DN	NPS	l1	d1	EN 1092-1 PN 10				EN 1092-1 PN 16				EN 1092-1 PN 25				Weight			
				øM	Tie-rod **		Screw A2		øM	Tie-rod*		Screw A2		øM	Tie-rod*		Screw A2		
					f	Qty	Y	Qty*		f	Qty	Y	Qty*		f		Qty	Y	Qty*
50	2	43	104	M16	20	4			M16	20	4			M16	20	4			3,2
65	2 1/2	46	123	M16	20	4/8			M16	20	4/8			M16	20	8			3,8
80	3	46	140	M16	20	8			M16	20	8			M16	20	8			4,5
100	4	54	180	M16	20	8			M16	20	8			M20	24	8			6,4
125	5	57	210	M16	20	8			M16	20	8			M24	29	8			9,7
150	6	57	235	M20	24	8			M20	24	8			M24	29	8			12,7
200	8	62	271	M20	24	8			M20	24	12			M24	29	12			22,5
250	10	70	323	M20	24	12			M24	29	12			M27	29	12			34,0
300	12	80	380	M20	24	12			M24	29	12			M27	32	16			48,8
350	14	92	449	M20	24	16			M24	29	16			M30	35	16			64,5
400	16	102	505	M24	29	16			M27	32	16			M33	38	16			89,0
450	18	114	570	M24	29	16	32	4	M27	32	16	31	4	M33	38	16	31	4	133,5

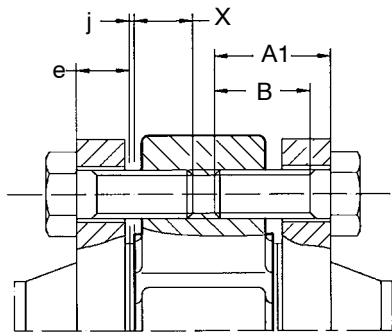
DN	NPS	l1	d1	ASME B 16-5 cl 150				JIS B2220 10K				JIS B2220 16K and 20K				Weight			
				UNC	Tie-rod*		Screw A2		øM	Tie-rod**		Screw A2		øM	Tie-rod**		Screw A2		
					f	Qty	Y	Qty*		f	Qty	Y	Qty*		f		Qty	Y	Qty*
50	2	43	104	5/8"	20	4			M16	20	4			M16	20	8			3,2
65	2 1/2	46	123	5/8"	20	4			M16	20	4			M16	20	8			3,8
80	3	46	140	5/8"	20	4			M16	20	8			M20	24	8			4,5
100	4	54	180	5/8"	20	8			M16	20	8			M20	24	8			6,4
125	5	57	210	3/4"	24	8			M20	24	8			M22	26	8			9,7
150	6	57	235	3/4"	24	8			M20	24	8			M22	26	12			12,7
200	8	62	271	3/4"	24	8			M20	24	12			M22	26	12			22,5
250	10	70	323	7/8"	29	12			M22	26	12			M24	29	12			34,0
300	12	80	380	7/8"	29	12			M22	26	16			M24	29	16			48,8
350	14	92	449	1"	32	12			M22	26	16			M30x3	35	16			64,5
400	16	102	505	1"	32	16			M24	29	16			M30x3	35	16			89,0
450	18	114	570	1 1/8"	35	12	40	4	M24	29	16	32	4	M30x3	35	16	32	4	133,5

* Quantity of nuts = quantity of tie-rods x 2

** Quantity of screws by face

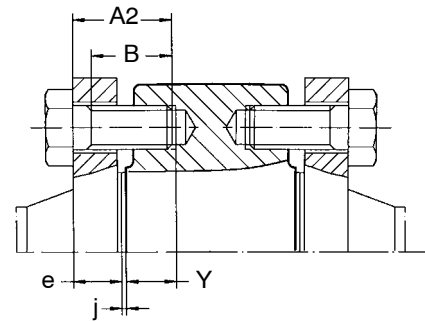
Full lug type body - Type 4 - Bolting

The bolting is not supplied.



$$A1 \text{ max.} = e + X + j$$

A1 max.: screw length
 e : flange thickness
 j : flange gasket thickness
 Y : screw max. implantation
 B : min. threaded length $B > A1 - e$



Screws at shaft passages

$$A2 \text{ max.} = e + Y + j$$

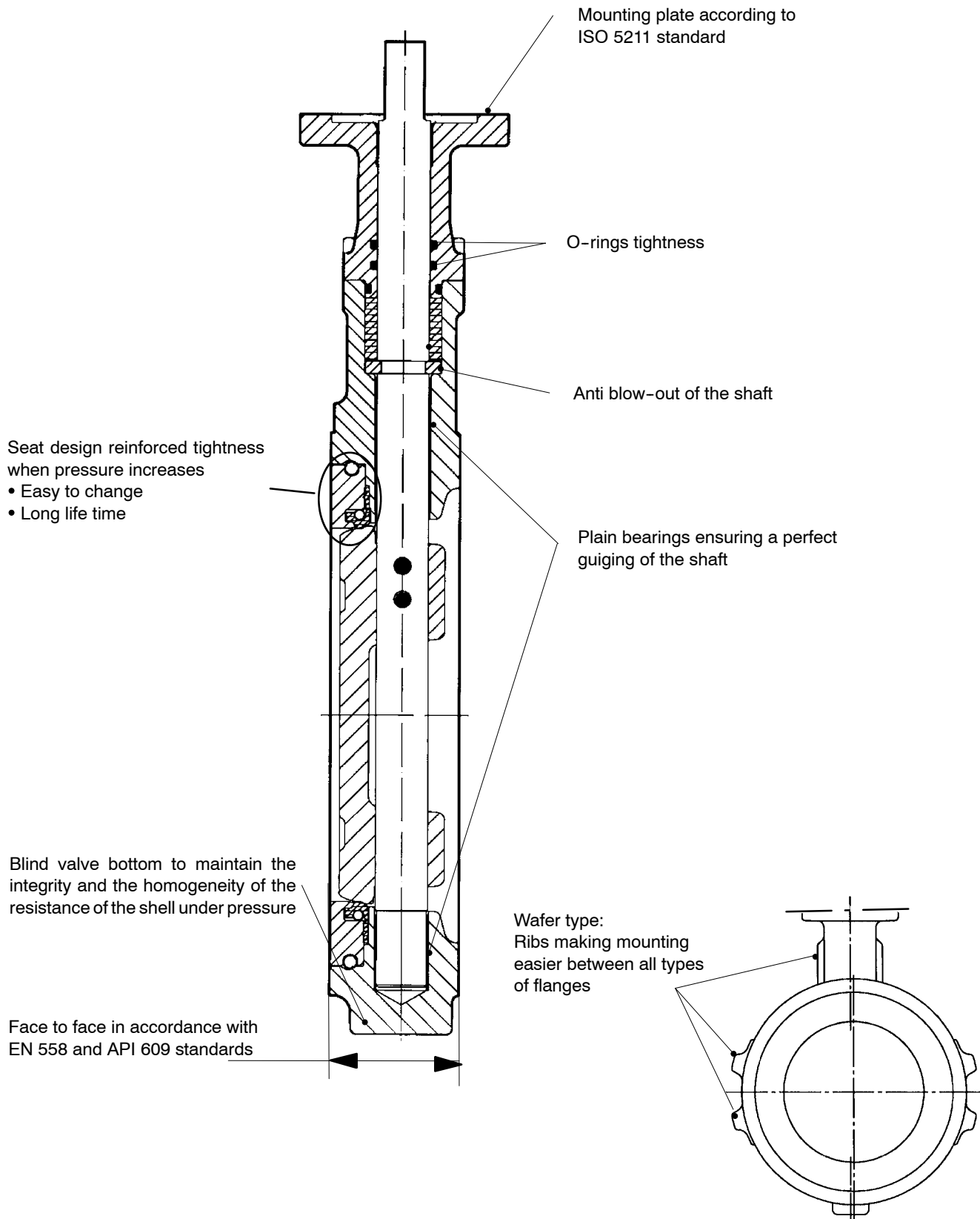
A2 max.: screw length
 e : flange thickness
 j : flange gasket thickness
 Y : screw max. implantation
 B : min. threaded length $B > A2 - e$

DN	NPS	l1	d1	EN 1092-1 PN 10 (1)				EN 1092-1 PN 16 (1)				EN 1092-1 PN 25				Weight			
				Screw A1		Screw A2		Screw A1		Screw A2		Screw A1		Screw A2					
				øM	X	Qty*	Y	Qty*	øM	X	Qty*	Y	Qty*	øM	X		Qty*	Y	Qty*
50	2	43	117	M16	20	4			M16	20	4			M16	20	4			4,6
65	2 1/2	46	131	M16	22	4			M16	22	4			M16	22	8			5,2
65	2 1/2	46	162	M16	22	8			M16	22	8			M16	22	8			6,5
80	3	46	136	M16	20	8			M16	22	8			M16	22	8			7,4
80	3	46	176																6,0
100	4	54	206	M16	24	8			M16	24	8			M20	26	8			10,2
125	5	57	240	M16	24	8			M16	24	8			M24	27	8			14,6
150	6	57	267	M20	27	8			M20	27	8			M24	27	8			17,2
200	8	62	310	M20	30	8			M20	30	12								25,5
200	8	62	338											M24	30	12			28,5
250	10	70	410	M20	30	12			M24	34	12			M27	30	12			44,0
300	12	80	460	M20	30	12			M24	36	12								64,8
300	12	80	470											M27	38	16			68,8
350	14	92	508	M20	30	16			M24	35	16			M30	38	16			97,5
350	14	92	529																87,7
400	16	102	593	M24	34	16			M27	38	16			M30	38	16			130,0
450	18	114	620	M24	32	20			M27	40	16	31	4	M33	41	16	31	4	178,5
450	18	114	649																163,5

DN	NPS	l1	d1	ASME B16-5 class 150				JIS B2220-10K				JIS B2220-16K and 20K				Weight			
				Screw A1		Screw A2		Screw A1		Screw A2		Screw A1		Screw A2					
				UNC	X	Qty*	Y	Qty*	øM	X	Qty*	Y	Qty*	øM	X		Qty*	Y	Qty*
50	2	43	117	5/8"	20	4			M16	20	4								4,6
65	2 1/2	46	131	5/8"	22	4			M16	22	4								5,2
65	2 1/2	46	162											M16	22	8			6,5
80	3	46	136	5/8"	22	4			M16	22	8			M20	22	8			6,0
100	4	54	206	5/8"	24	8			M16	24	8			M20	26	8			10,2
125	5	57	240	3/4"	27	8			M20	27	8			M22	27	8			14,6
150	6	57	267	3/4"	27	8			M20	27	8								17,2
150	6	57	288											M22	27	12			20,0
200	8	62	310	3/4"	34	8			M20	30	12			M22	30	12			25,5
250	10	70	410	7/8"	36	12			M22	33	12			M24	34	12			44,0
300	12	80	460	7/8"	33	12			M22	33	16			M24	36	16			64,8
350	14	92	508	1"	37	12			M22	31	16			M30x3	41	16			87,7
400	16	102	593	1"	38	16			M24	34	16			M30x3	40	16			130,0
450	18	114	620	1 1/8"	40	20			M24	32	20			M30x3	40	16	32	4	163,5

* Quantity of screws by face

Product features - to our customer's benefit



This leaflet is not contractual and may be amended without notice.

29.03.10

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